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Functional results of surgery neurogenic heterotopic ossification in patients with severe traumatic brain injury: About 19 cases

K. Belhaj, Y. Abdelfattah, A. Khadir, E. Kassimi, F. Lmidmani, A. El Fatimi

Service de médecine physique et de réadaptation fonctionnelle, CHU Ibn Rochd de Casablanca, quartier des hôpitaux, 20100 Casablanca, Morocco

E-mail address: ducari83@gmail.com

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Introduction.– Neurogenic heterotopic ossification is a frequent complication in brain injury patients. The functional impairment may be severe.

Objective.– The aim is to determine functional outcomes of patients undergoing surgery for heterotopic ossifications.

Patients and methods.– This is a retrospective study of 19 patients with severe brain injury followed for neurogenic heterotopic ossifications between January 2010 and March 2013. Patients were evaluated before and after surgery with an epidemiologic profile, a range of movement and a functional assessment.



Results.– There were 19 patients with 20 operated joints. The majority of patients were male with 16 men and three women, the average age was 31.5 years (19–44 years). The median duration of coma was 84.5 days (19–150 days). Preoperative mobility: for the hip: 31° (0°–65°), to the elbow 28° (0°–80°), the knee 45° (10°–80°). The functional assessment: walking and not sitting in eight patients, not hand-back in 9 patients, not hand-neck in eight patients and hand-mouth not in seven patients.

All patients received a functional rehabilitation based on continuous passive motion in addition to functional work and surgery excision of heterotopic ossifications. There was a significantly increased mobility after surgical treatment, with a gain of average mobility of 34° at the hip, 51° elbow and 46° at the knee.

Discussion and conclusion.– Neurogenic heterotopic ossifications constitute a disability in addition to various motor deficits, sensory or cognitive patient with severe brain injury. Surgery followed by appropriate rehabilitation has the goal of reducing pain and improving function.

Further reading

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